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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/550,725

12/15/2005

Takeshi Seki

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EXAMINER

HARRIS, GARY D

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

06/23/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/550,725	Applicant(s) SEKI ET AL.	
	Examiner GARY D. HARRIS	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 March 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-16 is/are pending in the application.
- 4a) Of the above claim(s) 15 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/30/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicants submitted PTO 1449 has been considered by examiner and is made part of the record. Additionally, US 6,331,364 was inadvertently not included in the notice of references cited in the previous action.

Applicant's arguments with respect to claims 9-14 have been considered but are moot in view of the new ground(s) of rejection. Applicant's amendments have necessitated a final rejection. Applicant argues that the film is an ordered film having an L1₀ structure. However the Maeda et al. '383 reference discloses L1₀ structure and would meet limitations regarding the superlattice reflected lines as argued by applicant. Applicant argues that it is necessary to shift to the Pt rich side however, the Maeda reference would include a Pt rich side. Amendment to Claim 12-14 is confusing as to whether the thin layer is related to the magnetic layer or the underlayer?

Claims 9-16 are examined in the instant application as follows:

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 12-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The wording of the claim is awkward and it is unclear if the thin layer is one or more of the transition and noble metals are one or more. Additionally, it is unclear as to whether the undercoat layer is FePt or an oxide undercoat layer. For purpose of examination the noble metal is considered to be added to the FePt.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 9-14 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Maeda et al. US 2002/0098383 A1.

As to Claim 9, Maeda et al. US 2002/0098383 A1 (US 6,777,078 B2) discloses an FePt magnetic layer (thin film) having an atomic composition ratio of 4:6 to 6:4 having an L1₀ structure (Paragraph 54) represented by the formula (Fe_{1-x}Pt_x) where x=.4-.6. These ratios would overlap applicants claim, for instance if x=.4 (40) it would be within the claimed ranges. Maeda understands that dispersing the grain diameter is about 50% in the case where the range of Fe: Pt is 4:6 and it decreases to about 25% when the ratio of Fe is increased (Paragraph 54). It would have been obvious to optimize the Fe:Pt ratio in a range of 4:6 to 6:4 as this would be a results

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effective variable MPEP 2144.05 that would be optimized by one of ordinary skill in the art through routine experimentation in producing and L1₀ structure and dispersing grain diameters.

As to Claim 10, Maeda et al. US 2002/0098383 A1 (US 6,777,078 B2) discloses thicknesses of 200 nm or less and more preferably 50nm or less (Paragraph 66).

As to Claim 11, Maeda et al. US 2002/0098383 A1 (US 6,777,078 B2) illustrates in figure 1, an underlayer, magnetic layer are laminated on the substrate (Paragraph 44). Maeda uses MgO as the oxide undercoat layer formed on the substrate (Paragraph 71). Additionally, Maeda discloses glass (crystalline) substrates containing one or more crystal boundaries (Paragraph 45).

As to Claim 12, Maeda et al. US 2002/0098383 A1 (US 6,777,078 B2) discloses the underlayer is interposed between the magnetic layer (Paragraph 46) formed of MgO (Paragraph 87) (interpreted as a transition metal compound) or any suitable material. Maeda uses Noble metals in the FePt material (Paragraph 8). Additionally, since Maeda uses a multi-layered FePt structure and Fe is clearly a transition metal it would necessarily meet the claim limitations.

As to Claim 13, Maeda et al. US 2002/0098383 A1 (US 6,777,078 B2) discloses forming magnetic layers, which is interpreted as multiple layers (Paragraph 69).

As to Claim 14, Maeda et al. US 2002/0098383 A1 (US 6,777,078 B2) discloses an Fe-Pt material and adding Cu & Au (Paragraph 9); and a Co-Pt based alloy and additions of Ni, Au and Mn (Paragraph 60).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GARY D. HARRIS whose telephone number is (571)272-6508. The examiner can normally be reached on 8AM - 5PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/D. Lawrence Tarazano/
Supervisory Patent Examiner, Art Unit 1794

Gary D. Harris /G. D. H./
Examiner, Art Unit 1794